

**U.S. Environmental Protection Agency  
Underground Injection Control Program**

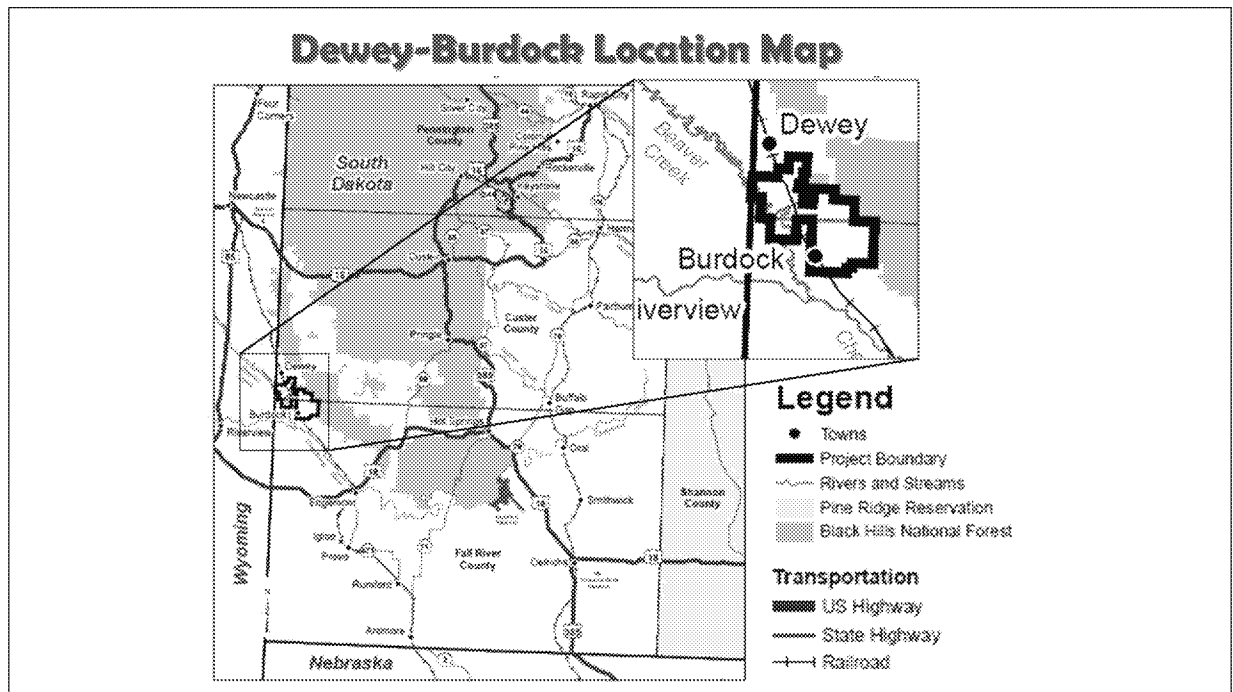
**EPA Session:**

***Information on the Dewey-Burdock Uranium Site  
near Edgemont, South Dakota***

***Prepared for: The Standing Rock Sioux Tribe***

**May 5, 2016**





The Dewey Burdock site is located in the SW corner of Custer County and the NW corner of Fall River County on the Wyoming/South Dakota border. In the southern Black Hills. About 45 miles west of the Pine Ridge Reservation. Very close to Cheyenne River which is a concern for Oglala Sioux and Cheyenne River Sioux Tribes since the Cheyenne River borders their reservations.

## **EPA Dewey-Burdock Permit Process**

- EPA's Role
  - Underground Injection Control (UIC) Program & Regulatory Mission
  - UIC Permits
- UIC Permitting Process
  - Technical Analysis
  - Tribal Consultation
  - Draft Permits
  - Public Participation Process
- EPA Outreach
  - Public Hearings in SD
  - Additional Tribal Community Outreach
  - Continuing Tribal Consultation

## **EPA Dewey-Burdock Permit Process: Tribal Consultation**

EPA's Policy is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests.

The EPA views Consultation as a process of meaningful communication and coordination between EPA and tribal officials prior to EPA taking actions or implementing decisions that may affect tribes.

Current EPA Tribal Consultation Actions to Date and Plan for next steps:

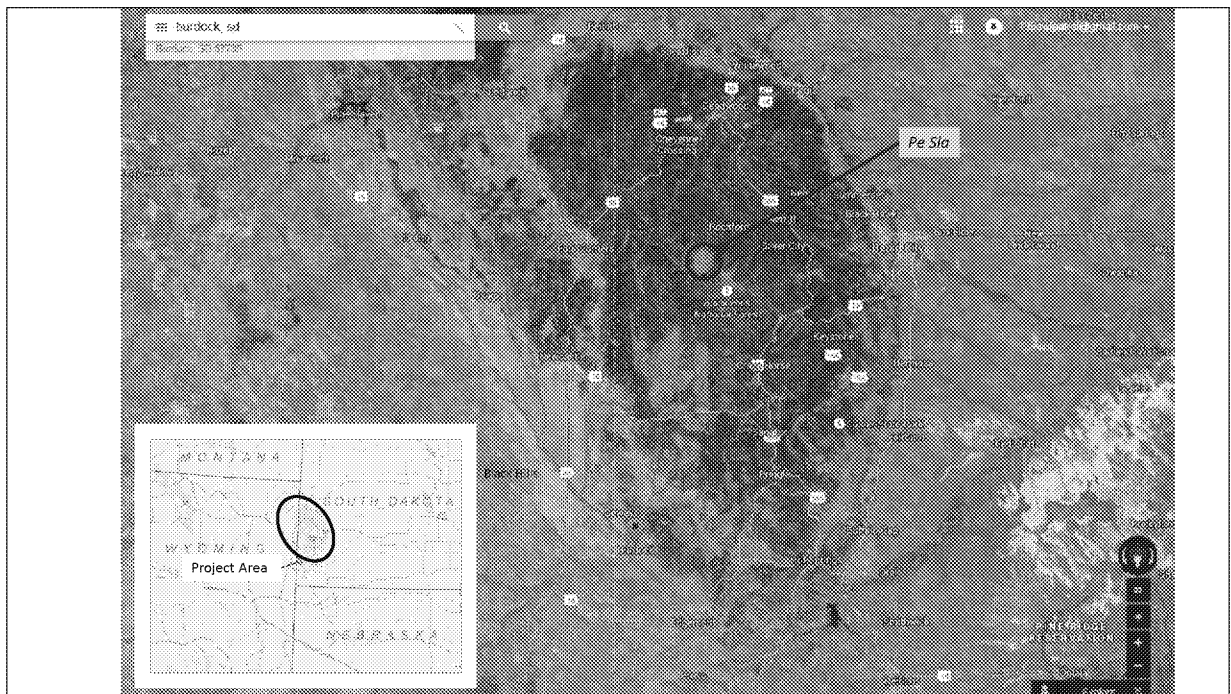
- Informational meetings with all Tribes with possible interest in site.
- "Inform & Educate" sessions to provide background information and opportunity for questions and discussion.
- Letters mailed November 25, 2015 providing notification of opportunity for formal consultation with EPA
- Receive back from Tribes notification of interest in formal government to government consultation with the EPA about the site.
- Formal Consultation opportunities before issuance of any

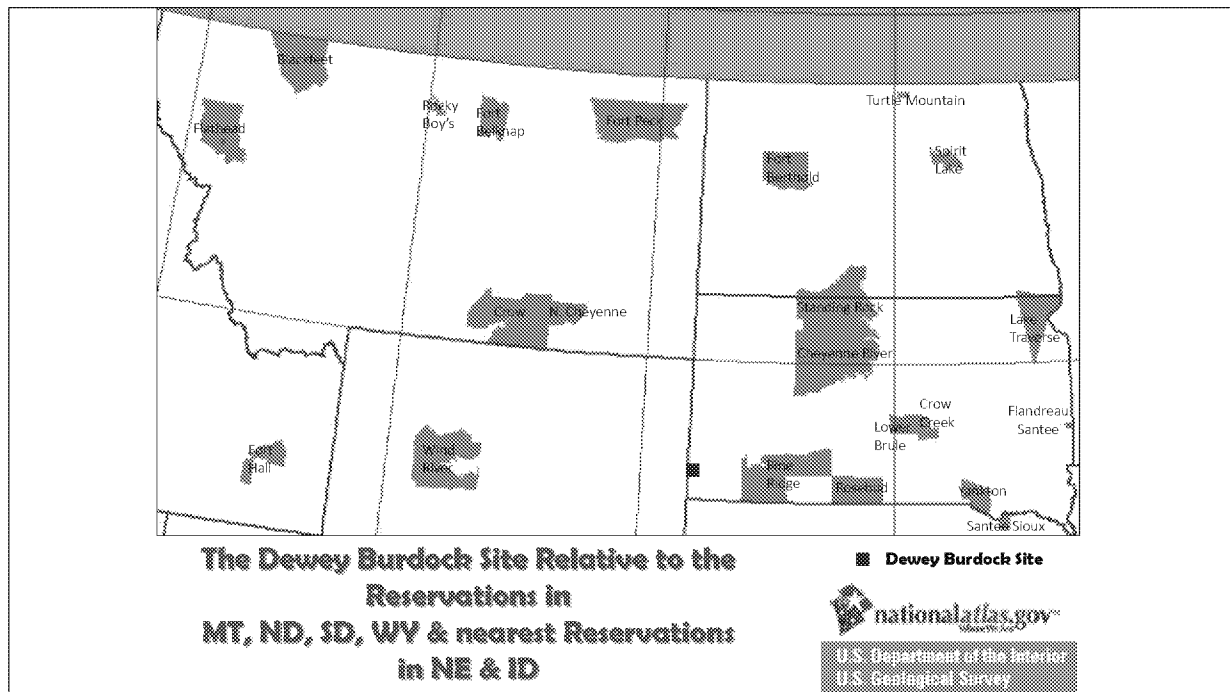
September 10, 2015, Bismarck meeting included THPOs from SD, ND and MT  
Oklahoma Tribes include 1) Ponca, 2) Kiowa, 3) Apache, 4) Cheyenne & Arapaho.

## **Opportunities for Tribal Participation**

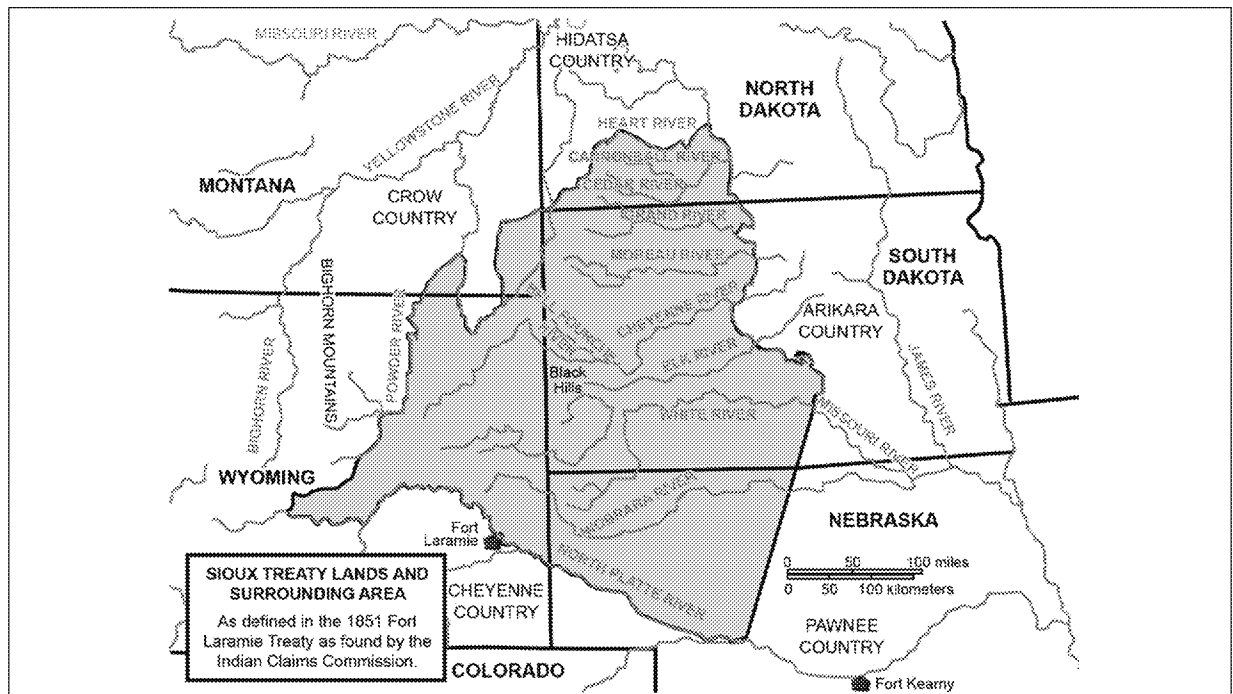
### **Informal and Formal Government-to-Government Consultation**

- Informal Opportunities:
  - Conference Calls or Web Conferences upon request
- Formal Opportunities:
  - Tribe may request formal consultation at any time.
- Participate in reviewing proposed permit and aquifer exemption decisions.
- Attend Public Hearings.
- Request additional informational web conferences.
- Request EPA to engage in community outreach.



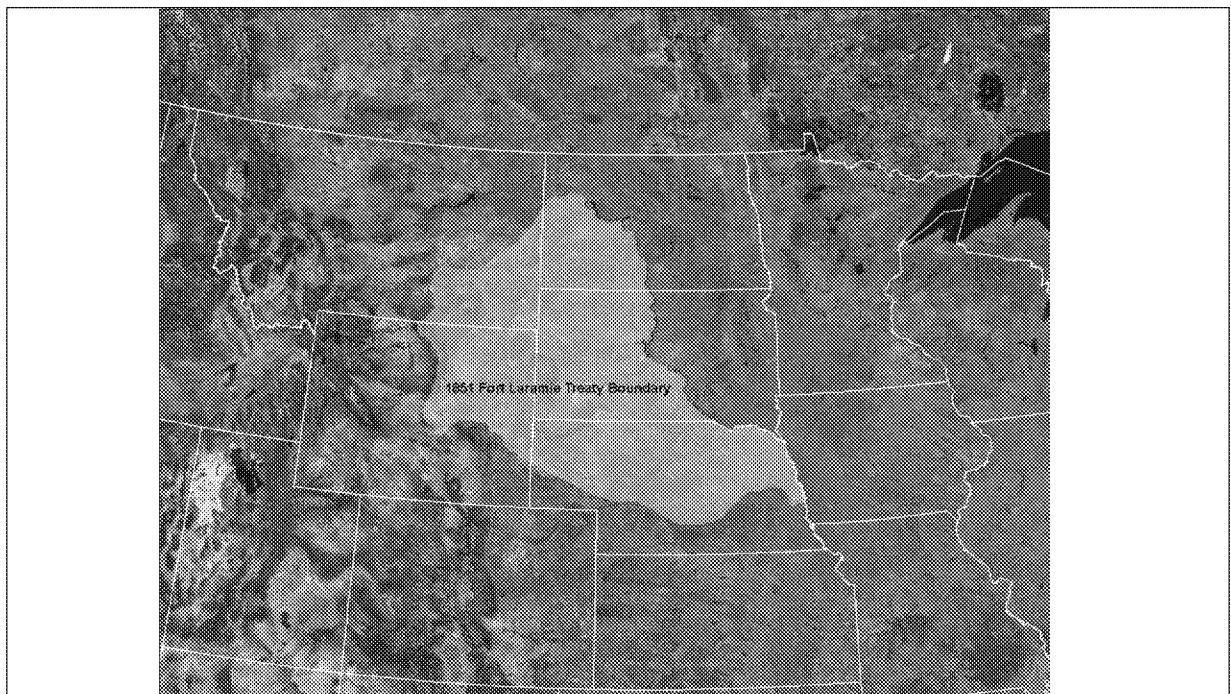


The Dewey Burdock site relative to the Reservations in MT, ND, SD, WY & nearest reservations in NE & ID

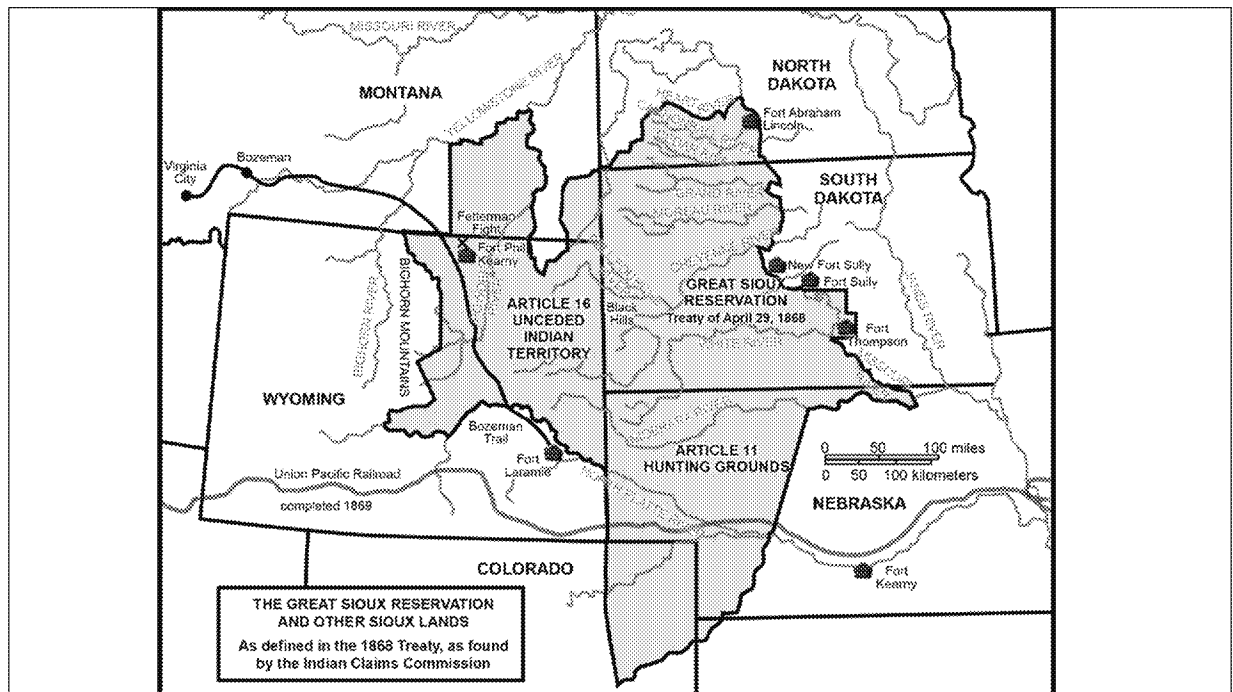


Map 1 From <http://ndstudies.gov/gr8/content/unit-iii-waves-development-1861-1920/lesson-4-alliances-and-conflicts/topic-2-sitting-bulls-people/section-3-treaties-fort-laramie-1851-1868>





From <http://www.suttonmapping.com/portfolio/cultural-resources/tribal-land-delineation>



Map 2 From <http://ndstudies.gov/gr8/content/unit-iii-waves-development-1861-1920/lesson-4-alliances-and-conflicts/topic-2-sitting-bulls-people/section-3-treaties-fort-laramie-1851-1868>

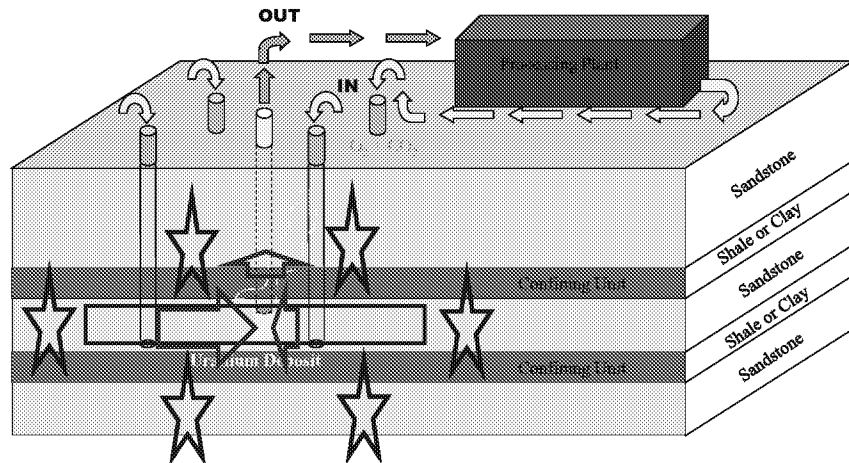
## **Dewey-Burdock Uranium In-Situ Recovery Site**

- The Dewey-Burdock site will recover uranium using injection wells.
- There will be no open pits, underground mine workings or tailings piles.
- The uranium will be extracted from the ore deposit using an injected lixiviant.
- The uranium-bearing solution will be pumped to the surface using extraction wells.



**Example of an In-Situ Uranium Recovery Site in WY**

## Uranium In-Situ Recovery Process



Typical five-spot pattern. In three dimensions, the wells follow the uranium deposit. Could be at different depths.  
 Blue box represents aquifer exemption boundary – this boundary outlines an aquifer that currently does not meet U.S. drinking water standards.

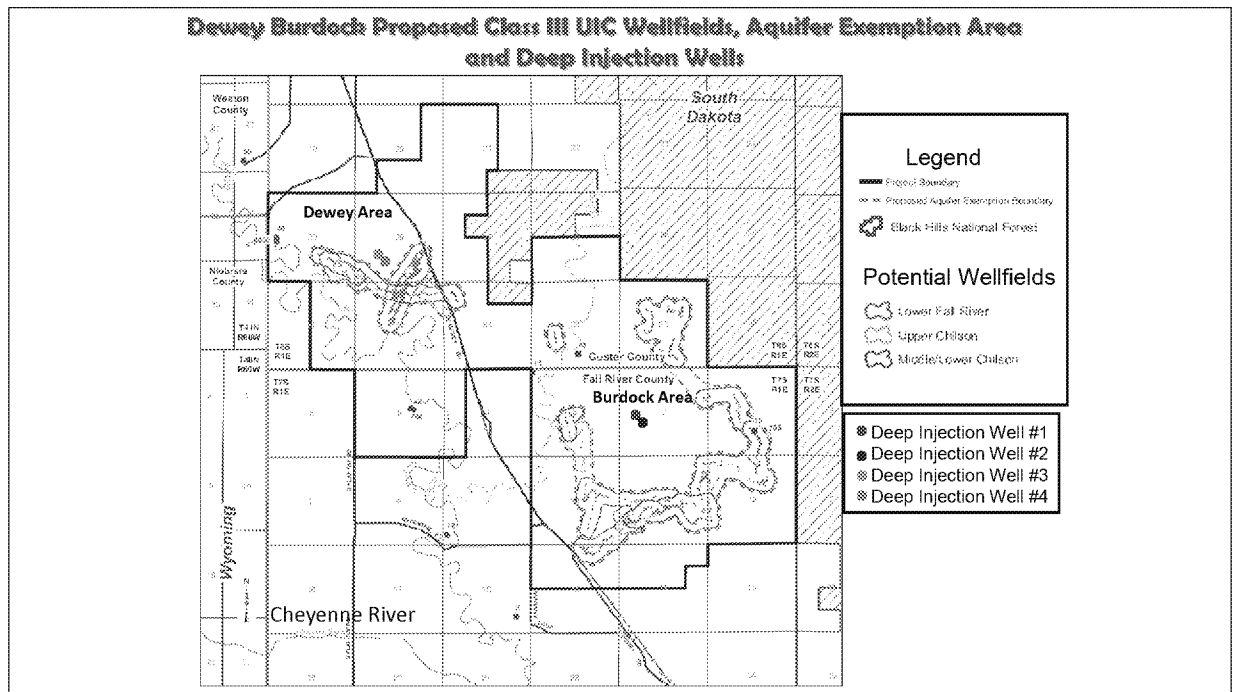
Goal with restoration process after mining is to get this zone back to baseline water quality.  
 Stars represent monitoring wells where we do not want to see any change in water quality.

## **Other Regulatory Agencies at the Dewey-Burdock Site**

- The Nuclear Regulatory Commission issued a License for the entire site.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a Large Mine Permit for the entire site.
- The BLM approved a Plan of Operations for portions of the site on BLM land.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a groundwater discharge permit for the land application of treated ISR waste fluids.

**The EPA Region 8 UIC Program  
Has Received  
Permit Application:  
for Two Types of Injection Well;**

1. A Class III Permit Application for the injection of lixiviant to mobilize uranium in the ore bodies.
2. A Class V Permit Application for the disposal of treated ISR waste fluids into deep wells.



Point out  
SD WY Border  
Custer and Fall River Counties  
Dewey Area & Burdock Area  
4 proposed wellfields in Dewey Area & 10 proposed wellfields in the Burdock Area.

**Regulatory Authority of the  
Underground Injection Control Program at  
the Dewey Burdock Site**

The UIC Program is authorized under the Safe Drinking Water Act to protect *Underground Sources of Drinking Water* from contamination resulting from injection activities.

*Underground source of drinking water (USDW)* means an aquifer or part of an aquifer which supplies drinking water or contains fewer than 10,000 mg/l total dissolved solids.



**Regulatory Authority of the  
Underground Injection Control Program at  
the Dewey Burdock Site**

UIC Program regulations specify the  
following requirements for injection wells:

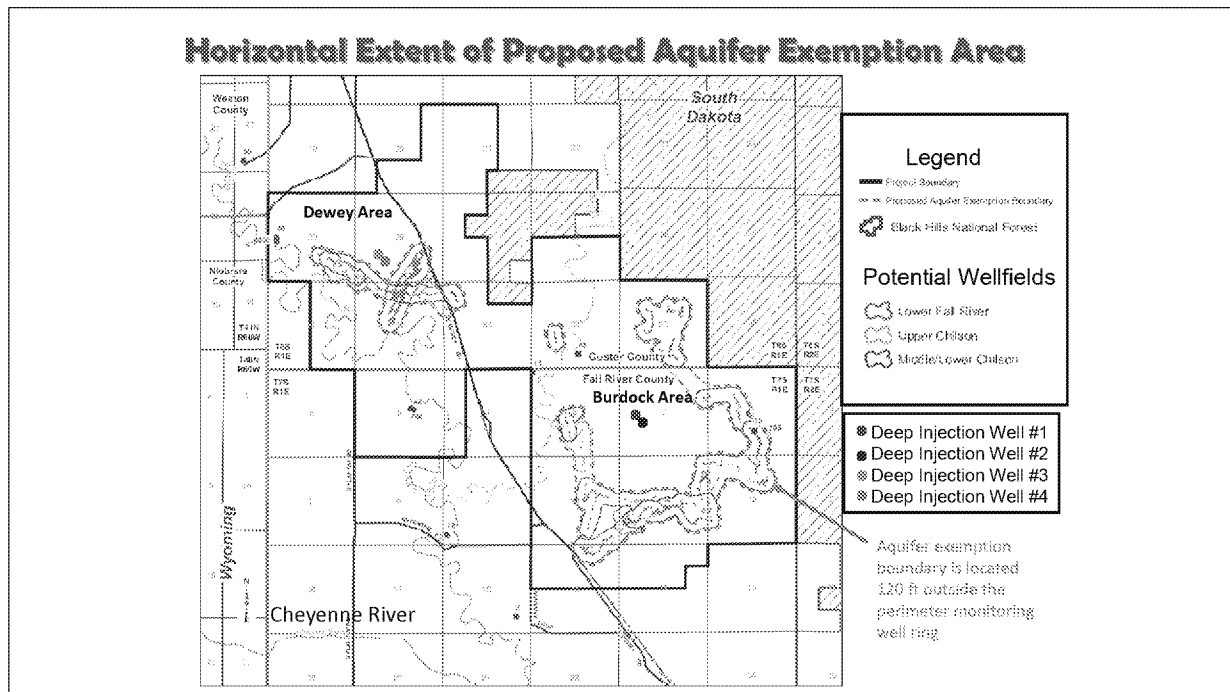
- construction,
- operation,
- monitoring,
- closure,
- financial assurance.

### **The EPA has been requested to Review an Aquifer Exemption**

An Aquifer Exemption is required to inject into the Class III wells for uranium recovery.

An Aquifer Exemption is allowed under UIC regulations IF the USDW

1. Does not currently serve as a source of drinking water and
2. Is mineral producing or can be demonstrated to contain commercially producible minerals.



AE Boundary 120 feet outside of wellfield monitoring ring.

Point out:

SD WY Border

Custer and Fall River Counties

Dewey Area & Burdock Area

4 proposed wellfields in Dewey Area & 10 proposed wellfields in the Burdock Area.

## **UIC Regulations**

- UIC regulations require the permittee to conduct considerable testing to provide EPA hydrogeological and other data before any injection wells are authorized to operate.
- The data must demonstrate vertical confinement to prevent movement of fluids out of the injection zone so that no USDWs are contaminated.
- The data must also demonstrate that it is possible to contain injection zone fluids horizontally to prevent contaminant migration into USDWs.